

# Discussion: The Economics of Animal Welfare

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This discussion highlights some of the strengths and weaknesses of the literature on animal welfare. Most pointedly, the literature on the economics of animal welfare is quite scant. As exemplified by these papers, however, there is a growing body of literature, especially those related to added costs of production and consumer demand for animal welfare attributes.

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**JEL Classifications:** Q13, Q16, Q18

The issue of animal welfare has become an increasingly visible matter of public debate and, to some extent, marketing strategy. The issues surrounding animal welfare are complex and contain a considerable amount of subjectivity, which leaves the issue prone to emotional and psychological interpretations that may or may not have a basis in science. The credence nature of “welfare” leads to perceptions, and, in some sense, perception is the same as reality within a market. As a result, much attention and resources are devoted to shaping public perception about this issue from provocative advertisements by the People for the Ethical Treatment of Animals (PETA) as well as counter campaigns launched by farm groups. Public initiatives to define and/or regulate the treatment of animals have become more commonplace, and food marketing firms have attempted to capitalize on perceived marketing opportunities in their production of goods. However, in many ways, firms are also seeking to shape public opinion so as to more sharply differentiate products (increase differentials in own-price elasticity of demand)

and maximize profits. It is in this environment that researchers are attempting to come to grips with potential values, policies, and market outcomes for animal welfare.

The articles in this session by Olynk, Tonsor, and Wolf (2010), Sumner et al. (2010), and Tonsor and Wolf (2010) all address different facets of the struggle to understand this complex issue. Rather than talk about each article in turn, I will address some crosscutting issues that are covered either directly or indirectly in each article. I will not attempt here to address the definition of animal welfare. Rather, my purpose is to raise some issues related to the operational understanding of the economics of animal welfare, whatever the technical definition that is used. I must freely admit that I come at this having done no serious research in the area. Rather, I bring a fresh set of eyes to the problem and hopefully can interject some different perspective.

First, how do we conceptually address the costs associated with animal welfare? Are these added costs on the system arising from a new set of demands about production practices? Alternatively, are these simply costs that must be internalized because lack of attention to animal welfare was a negative externality to

society? Added costs are added costs to be sure. However, how we conceptualize the source of those costs makes a big difference in how we are to address these politically and/or supply chain management-wise. Of course, the former suggests a “carrot” approach of subsidies and/or other positive incentives to induce adoption of “animal-friendly” production practices, whereas the latter suggests a “stick” approach of taxes or regulatory pressure. However, in either case, effective understanding of these issues must include an understanding of how policy actions are likely to impact the competitiveness of the affected industries.

The article by Sumner et al. does make this connection. Their analysis suggests that California egg producers will pay the price for cage-size regulations passed in California. Other egg producers, however, will benefit. The shift in production to more competitive states (it is useful to think of the U.S. as one big free trade zone here) reduces employment and income in California and raises the price of eggs to the state. Whether or not this tradeoff is welfare-enhancing or reducing to residents is not addressed, but the discussion of the tradeoffs is at least helpful to the debate. This issue is raised later in the article by Tonsor and Wolf when they addressed the tax/price implications and consumer support for welfare legislation.

We need to develop effective cost–benefit analyses if we are truly to understand the relationship between added costs and consumer willingness to pay (WTP) for both policy and supply-chain marketing reasons. However, to conduct a cost–benefit analysis, we must have some way of identifying the utility/welfare the public derives from the proposed policy/production practice. The article by Tonsor and Wolf is an example of this approach (and Olynk et al. illustrates combining consumer values with added costs to determine the probability of success for verification programs). WTP studies are useful from a number of perspectives such as the ability to analyze multiple scenarios without the actual ability to deliver those policies in reality, the ability to draw representative samples that can be used to analyze heterogeneity in behavior, and so on. The potential for hypothetical bias remains, however.

In addition, the potential for confounded factors in an issue as complex as animal welfare is particularly acute. Assume for simplicity that the “true” consumer welfare function for animal consumption is given by (an earlier version of this was presented in Hudson, 2007):

$$U = \alpha + \beta_1 P + \beta_2 W + \beta_3 QC + \beta_4 OQ$$

where  $P$  is the price,  $W$  is a variable to indicate the welfare of the animal,  $QC$  is a variable to indicate quality consistency, and  $OQ$  is a variable to indicate other qualities. Assume further that  $W$  is unobservable and is therefore proxied by a different variable,  $Z$ , which represents an “animal-friendly” brand. Finally, assume that  $QC$  is an unobservable quality characteristic that is correlated with  $W$ . Therefore,  $Z$  proxies for both  $W$  and  $QC$ . For example, maybe giving animals more room to move about lowers overall quality consistency because the producer has less control over feed intake. We can rewrite the utility function as:

$$U = \alpha + \beta_1 P + \beta_5 Z + \beta_4 OQ$$

where  $\beta_5 = \beta_2 + \beta_3$ . From here, the WTP for welfare (as derived from the indicator) is given by  $\beta_5/\beta_1$ , or the ratio of the marginal utility of the indicator over the marginal utility of money. If, as many studies have suggested, the sign of  $\beta_5$  is positive, then increases in animal welfare increase consumer utility.

However, as is clear from this, the welfare indicator  $Z$  confounds the effects of both the animal welfare and the quality consistency attributes. In reality, the true WTP is given by  $(\beta_3 + \beta_4)/\beta_1$ . As long as the animal welfare and confounded attributes are positively correlated, there is no problem. However, if they are negatively correlated, then the observed WTP for animal welfare is different than the actual, potentially leading to erroneous conclusions. This problem, of course, plagues all WTP studies of credence goods, not just animal welfare analyses.

Finally, we know little to nothing about what consumers think animal welfare incorporates. Tonsor and Wolf found that incorporating tax/price effects into their survey significantly reduced support for animal welfare measures.

As these authors note, this clearly indicates that these respondents discounted or ignored tax/price implications in casting their votes. More specifically, the marginal rate of substitution of income for animal welfare appears quite small. It may be that consumers are just that elastic in response. However, this result could also indicate that consumers are highly uncertain about what constitutes animal welfare and therefore uncertain how to value it. As is often the case, legislation has potentially outstripped public understanding of the issue.

A casual search of Google Scholar reveals that the economics of animal welfare is a subject with limited treatment in the literature. These articles presented here provide good additions to that literature. However, there remain a few conceptual/empirical issues that need to be resolved. Do we view animal welfare as primarily a new potential product attribute or a long-standing negative externality? How can we analyze welfare issues in the face of hypothetical bias and/or confounded variables? What role does uncertainty and/or malformed preferences affect our ability to estimate

consumer WTP? These are but a few of the open questions in this literature. However, this session has certainly illuminated some important issues.

## References

- Hudson, D. "Why Buy Brie? What Are We Measuring with Willingness to Pay for Geographic Indicators." Presented to the INRA Conference *Geographic Indicators and Brands: Firm Strategies and Public Policy*, June 2007, Toulouse, France.
- Olynk, N., G. Tonsor, and C. Wolf. "Verifying Credence Attributes in Livestock Production." *Journal of Agricultural and Applied Economics* 42(2010):439–52.
- Sumner, D., W. Matthews, J. Mench, and J. Rosen-Molina. "The Economics of Regulation on Hen Housing in California." *Journal of Agricultural and Applied Economics* 42(2010):429–38.
- Tonsor, G., and C. Wolf. "Drivers of Resident Support for Animal Care Oriented Ballot Initiatives." *Journal of Agricultural and Applied Economics* 42(2010):419–28.